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SETTING-UP EXERCISES FOR MEMBERS OF
THE UNIFORMED FORCE

AND

FIRST AID TO THE INJURED

FIRE DEPARTMENT

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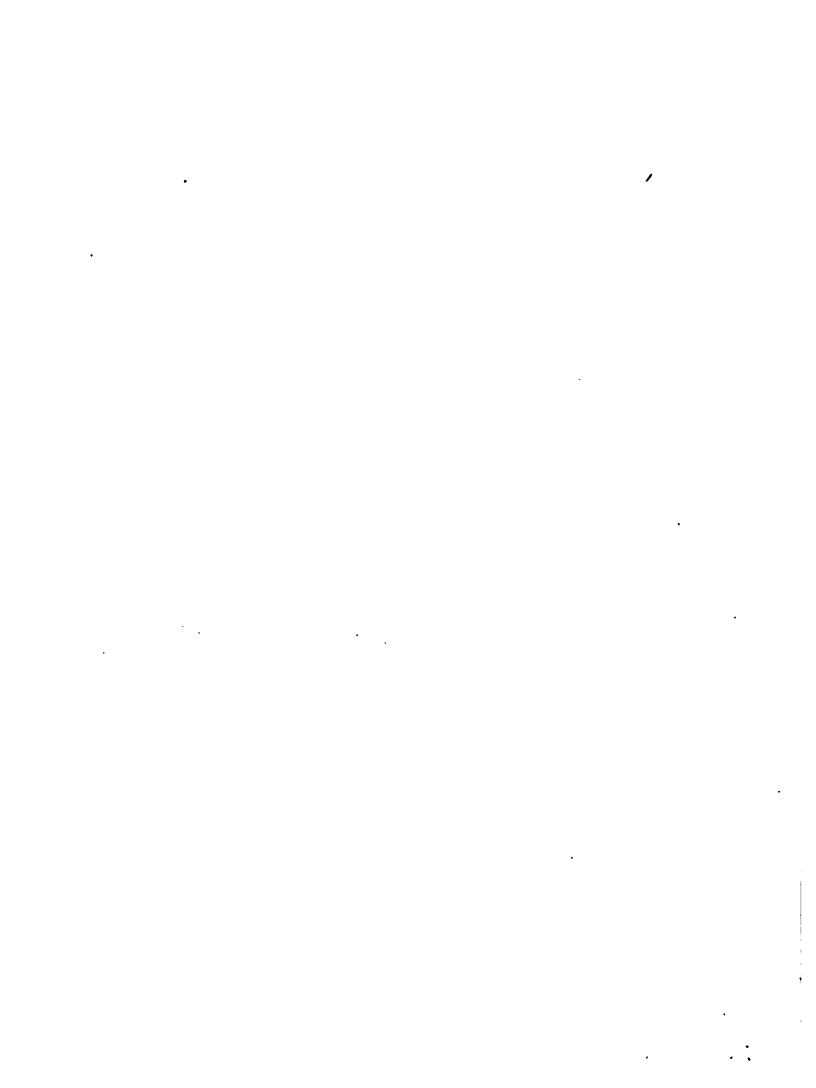
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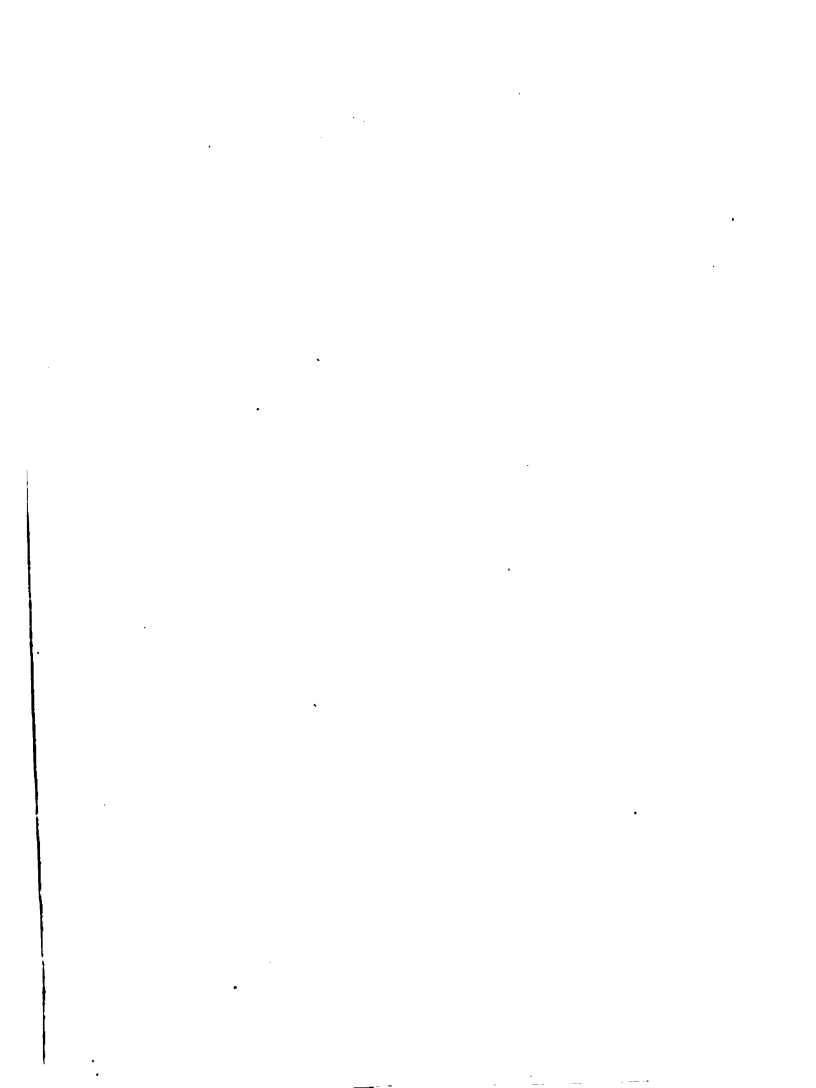


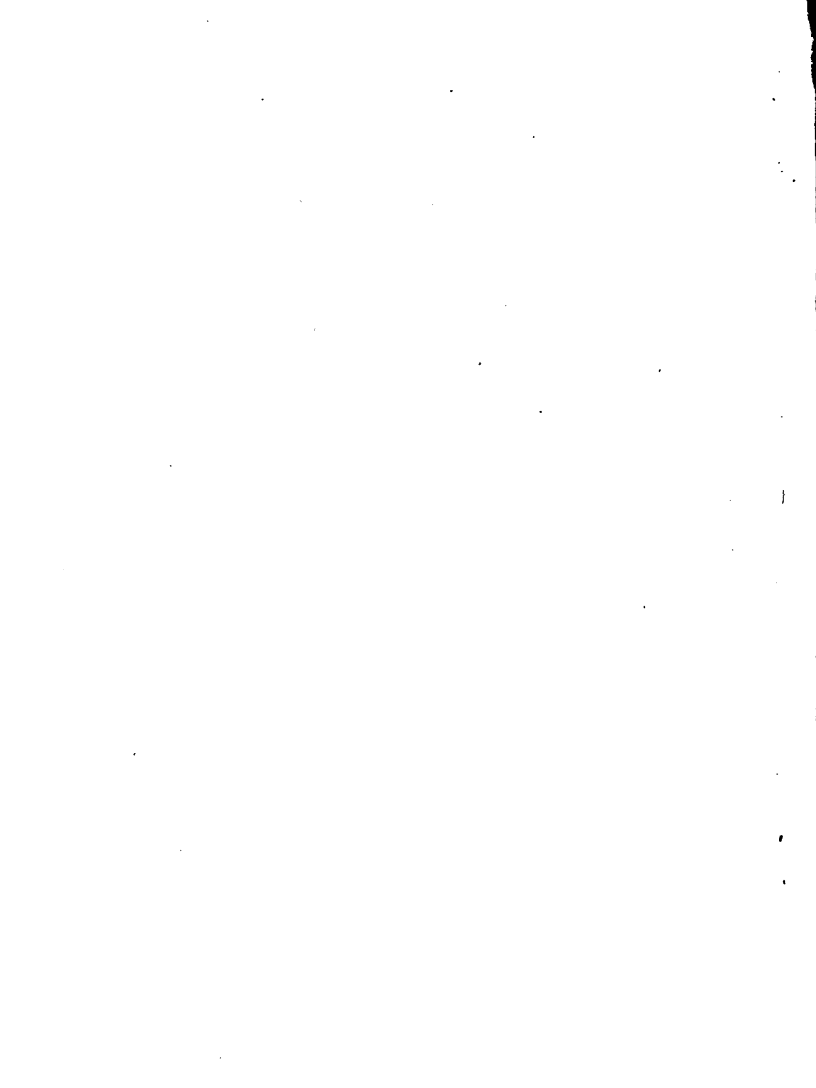
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SETTING-UP EXERCISES
FOR MEMBERS OF THE UNIFORMED FORCE
AND
FIRST AID TO THE INJURED



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UNITED STATES GOVERNMENT
GOVERNMENT PRINTING OFFICE

INSTRUCTIONS.

These exercises are for the purpose of keeping the members of the Department in good physical condition.

It has been observed that a great many of the members have increased in weight, especially about the abdomen, and these exercises are for the purpose of correcting this condition, and for stimulating the heart, lungs, and digestive system.

In order that they may prove beneficial, all the exercises should be executed with vigor and enthusiasm.

POSITION.

The position of attention should be assumed before starting the exercises. It is as follows:

Heels on the same line, and as near each other as the conformation of each man permits; feet turned out equally, and forming an angle of about 45 degrees; knees straight without stiffness; the body erect on the hips, and spine extended throughout its entire length; the shoulders, falling naturally, are forced back until they are square; chest arched and slightly raised. The arms hang naturally, thumb along seam of trousers, back of hand out, and elbows turned back; head erect, chin drawn in, so that the axis of the head and neck is vertical; eyes straight to the front, and fixed on an object at their own height.

In this position the weight rests principally upon the balls of the feet, the heels resting lightly upon the ground. When properly assumed, a vertical line drawn from the top of the head should pass in front of the ear, just in front of the shoulder and the thigh, and find its base at the balls of the feet.

Prior to starting the exercises, the men should form in line, four paces from each other.

First Series.

1. Position of attention, from *at ease* and *rest*.
2. Starting positions, Par. 10, Figs. 1 to 8.
3. 1. Raise and lower arms to side horizontal.

Two counts; repeat 8 to 10 times, Fig. 2.

The arms rigidly extended are brought to the sides smartly without coming in contact with the thighs. Inhale on first and exhale on second count.



FIG. 9.

4. 1. Hands on hips, 2. PLACE, 3. Quarter bend trunk forward.

Two counts; repeat 8 to 10 times, Fig. 9.

The trunk is inclined forward at the waist about 45 degrees and then extended again; the hips are as perpendicular as possible; execute slowly; exhale on first and inhale and raise chest on second count.

SETTING-UP EXERCISES.

5. 1. Arms to thrust, 2. RAISE, 3. Raise shoulders.

Two counts; repeat 8 to 10 times, Fig. 10.

The shoulders are raised as high as possible without deranging the position of the body or head and lowered back to position; execute briskly; inhale on first and exhale on second count.



FIG. 10.



FIG. 11.

6. 1. Hands on hips, 2. PLACE, 3. Quarter bend knees.

Two counts; repeat 8 to 10 times, Fig. 11.

The knees are flexed until the point of the knee is directly over the toes; whole foot remains on ground; heels closed; head and body erect; execute moderately fast, emphasizing the extension; breathe naturally.

7. 1. Arms backward, 2. CROSS, 3. Rise on toes.

Two counts; repeat 8 to 10 times, Fig. 12.

The body is raised smartly until the toes and ankles are extended as much as possible; heels closed; head and trunk erect; in recovering position heels are lowered gently; breathe naturally.



FIG. 12.

8. 1. Breathing exercise, 2. INHALE, 3. EXHALE.

At *inhale* the arms are stretched forward overhead and the lungs are inflated; at *exhale* the arms are lowered laterally and the lungs deflated; execute slowly; repeat four times.

SETTING-UP EXERCISES.*Second Series.*

1. Position of attention, as in first series.
2. Repeat first lesson.
3. 1. Hands on shoulders, 2. PLACE, 3. Extend arms forward.
Two counts; repeat 8 to 10 times.

The arms are extended forward forcibly, palms down, and brought back to position smartly, elbows being forced back; exhale on first and inhale on second count.



FIG. 13.

4. 1. Hands on hips, 2. PLACE, 3. Bend trunk backward.
Two counts; repeat 6 to 8 times, Fig. 13.

The trunk is bent backward as far as possible; head and shoulders fixed; knees extended; feet firmly on the ground; hips as nearly perpendicular as possible; in recovering care should be taken not to sway forward; execute slowly; inhale on first and exhale on second count.

5. 1. Arms to thrust, 2. RAISE, 3. Move shoulders forward.

Two counts; repeat 8 to 10 times, Fig. 14.

The shoulders are relaxed and moved forward and in as far as possible and then moved backward without jerking; head and trunk erect; execute slowly; exhale on first and inhale on second count.



FIG. 14.



FIG. 15.

6. 1. Arms backward, 2. CROSS, 3. Half bend knees.

Two counts; repeat 8 to 10 times, Fig. 15.

The knees are separated and bent halfway to the ground, point of knee being forced downward; head and trunk erect; execute smartly and emphasize the extension; breathe naturally.

SETTING-UP EXERCISES.

7. 1. Hands on hips, 2. PLACE, 3. Half bend trunk forward.

Two counts; repeat 8 to 10 times, Fig. 16.

The trunk is inclined forward until it is at right angles to the legs, hips perpendicular; knees extended; head and shoulders fixed; execute moderately slow; exhale on first and inhale and raise chest on second count.



FIG. 16.

8. 1. Hands on shoulders, 2. PLACE, 3. Strike arms sideward.

The arms, knuckles down, hands closed, are flung outward forcibly and brought back to shoulders smartly; execute fast; breathe naturally.

9. Breathing exercise, as in first lesson.

Third Series.

1. Position of attention, as in first series.
2. Repeat second lesson.
3. 1. Raise arms overhead laterally.

Two counts; repeat 8 to 10 times, as in Fig. 3.

The arms, rigidly extended at the elbows, are raised overhead, palms inward, smartly and brought down the same way; execute moderately fast; inhale on the first and exhale on the second count.



FIG. 17.

4. 1. Hands on hips, 2. PLACE, 3. Bend trunk sideward, right or left.

Two counts; repeat 6 to 8 times, Fig. 17.

The trunk, stretched at the waist, is inclined sideward as far as possible; head and shoulders fixed; knees extended and feet firmly on the ground; execute slowly; inhale on first and exhale on second count.

SETTING-UP EXERCISES.

5. 1. Arms to thrust, 2. RAISE, 3. Bend head forward and backward.

Four counts; repeat 6 to 8 times, Fig. 18.

The chin is drawn in and the head bent forward, back muscles of neck being stretched upward; shoulders remain fixed; in recovering the muscles are relaxed; execute slowly; inhale and raise chest on first and exhale on second count. In bending the head backward the muscles of the neck are stretched upward; breathe as before.



FIG. 18.



FIG. 19.

6. 1. Curl shoulders forward.

Two counts; repeat 6 to 8 times, Fig. 19.

The shoulders relaxed are rolled forward as far as possible, arms being rotated forward; they are then rolled backward and the arms are rotated backward; execute slowly; exhale on first and inhale on second count.

7. 1. Hands on hips, 2. PLACE, 3. Full bend knees.

Two counts; repeat 6 to 8 times, Fig. 20.

The knees are separated and bent as much as possible; point of knees forced forward and downward; heels together; trunk and head erect; execute slowly; breathe naturally.



FIG. 20.

8. 1. Hands in rear of head, 2. LACE, 3. On toes, 4. RISE, 5. ROCK.

Two counts; repeat 6 to 8 times.

The body is raised on toes and then by short and quick; extensions and flexions of the toes it is lowered and raised knees extended; heels together and free from the ground; breathe naturally.

9. Breathing exercise as in first lesson.

Fourth Series.

1. Repeat third series.
2. 1. Arms to thrust, 2. RAISE, 3. Thrust arms forward.
Two counts; repeat 8 to 10 times, Fig. 21.

The arms, knuckles up, are thrust forward forcibly; in recovering the elbows are forced back; execute moderately fast; exhale on first and inhale on the second count.



FIG. 21.



FIG. 22.

3. 1. Hands on shoulders, 2. PLACE, 3. Twist trunk sideward, right or left.
Two counts; repeat 6 to 8 times, Fig. 22.

The trunk is turned to the right or left as far as possible; hips as nearly perpendicular as possible; shoulders square and head erect; knees extended and feet firm; execute slowly; inhale on first and exhale on second count.

4. 1. Arms to thrust, 2. RAISE, 3. Turn head right, or left.

Two counts; repeat 6 to 10 times, Fig. 23.

The head, chin square, is turned to the right, or left, as far as possible, muscles of the neck being stretched; shoulders remain square; execute slowly; breathe naturally.



FIG. 23.



FIG. 24.

5. 1. Hands on hips, 2. PLACE, 3. Raise knee.

Two counts; repeat 10 to 12 times, Fig. 24.

The thigh and knee are flexed until they are at right angles, thigh horizontal; toes depressed; the right knee is raised at *one* and the left at *two*; trunk and head erect; execute in cadence of quick time; breathe naturally.

SETTING-UP EXERCISES.

6. 1. Fingers in rear of head, 2. LACE, 3. Full bend trunk forward.
FORWARD.

Two counts; repeat 6 to 8 times, Fig. 25.

The trunk is bent forward as far as possible; knees extended; feet firm; head and shoulders fixed; execute slowly; exhale on first and inhale on second count.



FIG. 25.

7. 1. Hands on hips, 2. PLACE, 3. On toes, 4. RISE, 5. HOP.

Two counts; repeat 12 to 16 times.

The body is raised on toes and the hopping is performed with knees extended; execute fast; breathe naturally.

8. Breathing exercise, as in first lesson.

Fifth Series.

1. Repeat fourth series.
2. 1. Arms forward, 2. RAISE, 3. Stretch arms sideward.
Two counts; repeat 6 to 8 times, Fig. 26.



FIG. 26.

From the front horizontal the arms are extended to their fullest extent and then stretched sideward, the arms rotating till the palms are up; the sideward movement is performed slowly; the recovery relaxed and quick; inhale on first and exhale on the second count.

SETTING-UP EXERCISES.

3. 1. Hands on hips, 2. PLACE, 3. Bend trunk obliquely forward, right or left.

Two counts; repeat 4 to 8 times, Fig. 27.

The trunk is turned to the right and bent forward to the half-bend position; shoulders remain square, in the plane of the ground; head fixed; knees straight; feet firm; hips as nearly perpendicular as possible; execute slowly; exhale on the first and inhale and raise chest on second count.



FIG. 27.



FIG. 28.

4. 1. Arms to thrust, 2. RAISE, 3. Extend leg forward.

Two counts; repeat 8 to 10 times, Fig. 28.

The knee and ankle are extended forward with a snap, the toes just escaping the ground; all extensor muscles contracted; in recovering relax; trunk and head erect; execute briskly; breathe naturally.

5. 1. Hands on shoulders, 2. PLACE, 3. Move elbows forward.

Two counts; repeat 8 to 10 times. Fig. 29.

The elbows are brought together horizontally in front and then forced back as far as possible; the forward movement relaxed, the backward a stretch not a jerk; execute moderately fast; exhale on the first and inhale on the second count.



FIG. 29.

6. 1. Hand on hips, 2. PLACE, 3. Bend trunk forward and backward.

Two counts; repeat 6 to 8 times.

Bend trunk forward to the half-bend position (Fig. 16), and then backward (Fig. 13); execute slowly; exhale on first and inhale on second count.

SETTING-UP EXERCISES.

7. 1. Arms backward, 2 CROSS, 3. Rise on toes, right and left alternately.

Four counts; repeat 10 to 12 times, Fig. 30.



FIG. 30.

The body is extended on the toes of the right foot and then on those of the left; heels closed; trunk and head erect; execute moderately fast; breathe naturally.

8. Breathing exercise, as in first lesson.

Sixth Series.

1. Repeat fifth series.
2. 1. Arms forward overhead, 2. RAISE, 3. Swing arms downward and upward.
Two counts; repeat 8 to 10 times, Fig. 31.



FIG. 31.

3. 1. Arms sideward overhead, 2. RAISE, 3. Fingers, 4. LACE, 5. Bend trunk sideward, right and left.

Two counts; repeat 6 to 8 times, Fig. 32.

The arms are fully extended and the body, stretched at the waist, is bent sideward to the right and left; knees straight; feet firm; head erect; execute slowly; breathe naturally.

SETTING-UP EXERCISES.

4. 1. Knees to squatting position, hands on hips, 2. BEND, 3. Rock on knees.

Two counts; repeat 6 to 8 times.

The knees are bent as in Fig. 20; extend and bend the knees in quick succession; trunk and head erect; heels closed; execute moderately fast; breathe naturally.



FIG. 32.

5. 1. Arms to thrust, 2. RAISE, 3. Move shoulders forward, up, back, and down.

Four counts; repeat 8 to 10 times.

The shoulders are relaxed and brought forward; in that position they are raised; then they are forced back without lowering them; and then they are dropped back to position; execute slowly; exhale on the first; inhale on the second and third and exhale on the last count.

6. 1. Arms to thrust, 2. RAISE, 3. Thrust arms forward; swing them sideward, forward, and back to position.

Four counts; repeat 8 to 10 times.



FIG. 33.

The arms are thrust forward, then relaxed and swung sideward, then forward and finally brought back to position, pressing elbows well to the rear; execute moderately fast; exhale on the first and third and inhale on the second and fourth counts.

SETTING-UP EXERCISES.

7. 1. Hop to side straddle and swing arms over head laterally and recover position of attention.

Two counts; repeat 8 to 10 times, Fig. 33.

The distance between the legs is about 30 inches; in alighting the toes come in contact with the ground first and knees are bent slightly; trunk and head erect; arms extended; execute moderately fast; breathe naturally.

8. Breathing exercise, as in first lesson.



FIG. 34.

TRAINED SOLDIERS' INSTRUCTION.*First Series.*

1. 1. Stretch arms forward, sideward, forward and down.

Four counts; repeat 6 to 8 times.

The arms, stretched to their utmost, are raised forward horizontally, then moved sideward, knuckles down; in

returning and lowering the arms the muscles are relaxed; trunk and head erect; execute first two motions slowly; second two moderately fast; inhale on first and second, and exhale on third and fourth counts.

1. Hands on shoulders, 2. PLACE, 3. Half bend trunk forward and extend arms sideward.

Two counts; repeat 6 to 8 times, Fig. 34.

The trunk is bent as in Fig. 16, and arms are extended forcibly; in the recovery the elbows are forced back and the chest raised; execute slowly; exhale on first, inhale on second count.



FIG. 35.

1. Hands on hips, 2. PLACE, 3. Full bend knees and extend arms sideward.

Two counts; repeat 6 to 8 times, Fig. 35.

The knees are bent as in Fig. 20, and arms are extended sideward forcibly; execute moderately slow; breathe naturally.

SETTING-UP EXERCISES.

4. 1. Arms sideward, 2. RAISE, 3. Roll shoulders and arms forward and back.

Two counts; repeat 6 to 10 times, Fig. 36.

The arms are rotated and the shoulders rolled forward and backward as far as possible; execute slowly; exhale on first and inhale and raise chest on second count.



FIG. 36.

5. 1. Hands on shoulders, 2. PLACE, 3. Twist trunk sideward right, or left, and extend arms sideward.

Two counts; repeat 6 to 8 times, Fig. 37.

The trunk is twisted as in Fig. 22; execute moderately fast; inhale on the first and exhale on the second count.

6. 1. Raise arms and right or left leg forward, move arms sideward and leg backward; move arms and leg forward and recover.

Four counts; repeat 8 to 10 times, Fig. 38.

On the first count, the arms and legs are raised forward, arms horizontal, leg extended; toes depressed; foot at height



FIG. 37.



FIG. 38.

of knee; on the second count the arms are moved smartly to side horizontal and the leg is moved backward, knee and toes extended; at *three* the first position is assumed and at *four* the position of attention; execute moderately fast; inhale on first two and exhale on last two counts.

SETTING-UP EXERCISES.

7. 1. Forearms vertically, 2. RAISE, 3. Extend arms upward and raise on toes; resume vertical position; and recover position of attention.

Four counts; repeat 8 to 10 times, Fig. 39.



FIG. 39.

The forearms are raised vertically at *one*; at *two* they are extended upward and the body is raised on toes; at *three* the first position is assumed, and at *four* the position of attention; execute briskly; inhale on first two and exhale on last two counts.

- 8 Breathing exercise.

Second Series:

1. Repeat first series.
2. 1. Arms to thrust, 2. RAISE, 3. Thrust arms upward, swing downward and backward, swing upward and recover.
Four counts; repeat 6 to 10 times, Fig. 40.



FIG. 40.



FIG. 41.

The arms are thrust upward forcibly at *one*; at *two* the arms, relaxed, are swung downward to the front and back as far as possible; at *three* they are swung upward, and at *four* the position of attention is resumed; trunk and head erect; knees extended; execute moderately fast; inhale on first three and exhale on last count.

SETTING-UP EXERCISES.

3. 1. Hands on shoulders, 2. PLACE, 3. Bend trunk backward and extend arms sideward, knuckles up.

Two counts; repeat 6 to 8 times, Fig. 41.

The trunk is bent backward as in Fig. 13, and the arms, knuckles down, are extended to the side horizontal; head fixed; knees extended; feet firm; execute slowly; inhale on first and exhale on second count.



FIG. 42.

4. 1. Full bend knees and raise arms, knuckles down, to side horizontal, 2. BEND, 3. Rock, and circle arms backward.

Two counts; repeat 6 to 10 times, Fig. 42.

The knees, bent to the squatting position, are slightly extended and flexed as in Exercise 4, Sixth Lesson, Recruit Instruction, and the arms are circled backward in circles of about 12 inches; head and trunk erect; arms extended; execute moderately fast: breathe naturally.

5. 1. Hands on hips, 2. PLACE, 3. Circle trunk right, or left.

Six counts; repeat 4 to 6 times, Fig. 43.

The trunk is half bent forward at *one*; at *two* it is moved to the right side bend position; at *three* to the back bend; at *four* to the left bend; at *five* to the front bend position and raised at *six*; knees extended; feet firm; head fixed; execute slowly; exhale on first; inhale on second; hold breath on third and fourth; exhale on fifth and inhale on sixth count.



FIG. 43.



FIG. 44.

6. 1. Hands on hips, 2. PLACE, 3. Swing right and left leg forward, breast high, and extend right and left arm forward horizontally, alternating right and left.

Four counts; repeat 6 to 10 times, Fig. 44.

The right leg, knee extended, is swung forward high enough to come in contact with the hand; supporting leg extended; body inclined as little as possible; execute moderately fast; breathe naturally.

7. 1. Leaning rest in four counts.

Repeat 6 to 8 times, Fig. 45 *a* and *b*.

At *one* knees are bent to squatting position, hands on the ground between knees; at *two* the legs are extended backward to the leaning rest; at *three* the first position is resumed,

FIG. 45 *a*.FIG. 45 *b*.

and at *four* the position of attention; hands should be directly under shoulders; back arched; knees straight; head fixed; execute moderately fast; breathe naturally.

8. Breathing exercise.

Third Series.

1. Repeat second series.
2. 1. Stretch arms forward, sideward, upward, sideward, forward, and down.

Six counts; repeat 6 to 10 times.

First five counts arms are extended as much as possible; in the last they are relaxed; execute slowly; inhale on first three counts and exhale on last three.



FIG. 46.

3. 1. Half bend trunk forward and rotate arms inward; raise and bend trunk backward, raising and rotating arms backward, palms up; resume first position and recover.

Four counts; repeat 4 to 8 times, Fig. 46.

In the first position the body and arms are relaxed; in the second the body and arms are tense (Fig. 41); the third position is the same as the first, and at *four* the position of attention is resumed; execute slowly; exhale on first and third and inhale on second and fourth counts.

SETTING-UP EXERCISES.

4. 1. Hands on hips, 2. PLACE, 3. Rise on toes, bend knees to squatting position; extend knees and recover.

Four counts; repeat 6 to 8 times.

The body is raised on toes slowly at *one*; at *two* the knees are bent slowly to squatting position; at *three* they are extended slowly and at *four* the starting position is resumed; execute slowly; breathe naturally.



FIG. 47.



FIG. 48.

5. 1. Hop to side straddle position, hands on hips, bend trunk forward and extend arms downward, fingers touching ground; resume straddle with hands on hips and hop to attention.

Four counts; repeat 6 to 8 times, Fig. 47.

Execute moderately fast; breathe naturally.

6. 1. Arms to thrust, 2. RAISE, 3. Thrust arms forward; swing right, (left) arm up, left, (right) down; swing to front horizontal and recover.

Four counts, or alternating in eight counts; repeat 8 to 10 times, Fig. 48.

The thrust and recovery are forcible, the swings brisk but relaxed; execute moderately fast; exhale on first and third count and inhale on second and fourth.



FIG. 49 a.



FIG. 49b.

7. 1. Step position forward right, or left, and raise arms to front horizontal; lunge forward and swing arms to side horizontal; resume first position and recover position of attention.

Four counts; repeat 6 to 10 times, Fig. 49 a and b.

The right foot, knee extended and toes depressed, is moved forward once its length, the toes resting on the ground lightly, the weight resting on the left leg, and the arms are raised to

SETTING-UP EXERCISES.

the front horizontal, at *one*; at *two* the right foot is advanced and planted smartly, the distance between heels being about 3-foot lengths, and the arms are swung to side horizontal; right knee is well bent, left extended; trunk and head erect; at *three* the first position, and at *four* the position of attention are resumed; execute moderately fast; exhale on first and third and inhale on second and fourth counts.

8. Breathing exercise.



FIG. 50.

Fourth Series.

1. Repeat third series.
2. 1. Hands on shoulders, 2. PLACE, 3. Extend arms upward, swing arms downward laterally, upward laterally, and recover starting position.

Four counts; repeat 6 to 10 times.

The first and fourth motions are energetic; the second and third relaxed; execute moderately fast; inhale on first and third counts and exhale on second and fourth.

3. 1. To side straddle with arms overhead, 2. Hop, 3. Bend trunk forward and back and swing arms downward and upward.

Two counts; repeat 6 to 8 times, Fig. 50.



FIG. 51.

Being in the straddle position, the body is bent forward as far as possible and the arms are swung between the legs; the arms are then swung upward and the body bent backward; knees extended; execute moderately fast; exhale on first and inhale on second count.

4. 1. Arms to thrust, 2. RAISE, 3. Thrust arms sideward and lunge sideward right and left alternately.

Four counts; repeat 8 to 10 times, Fig. 51.



FIG. 52.

The starting position is resumed at *two* and *four*; the distance of the lunge is three times the length of the feet; supporting leg extended; head and trunk erect; execute moderately fast; inhale on first and third and exhale on second and fourth counts.

5. 1. Hands on shoulders, 2. PLACE, 3 Bend trunk sideward right and extend left arm obliquely upward and right obliquely downward; swing trunk sideward left and right and recover.

Four counts; repeat 6 to 8 times, Fig. 52.

The trunk is bent to the right, the left arm, palm down, is extended obliquely upward and the right arm obliquely downward, at *one*; at *two* the body is bent to the left; at *three* to the right and at *four* the starting position is resumed; arms extended; knees straight; head fixed; execute moderately fast; breathe naturally.



FIG. 53.

6. 1. To squatting position, hands on ground. 2. BEND. 3. Extend right and left legs backward, alternately.

Four counts; repeat 6 to 10 times, Fig. 53.

The squatting position is the starting position, from there the right and left legs are extended backward and brought back to the squatting position again; execute moderately fast; breathe naturally.

SETTING-UP EXERCISES.

7. 1. Hands on shoulders. 2. PLACE, 3. Extend arms sideward and swing right and left legs sideward, alternately. Four counts; repeat 8 to 10 times, Fig. 54.



FIG. 54.

The legs are extended and swung loosely to the side as high as possible, arms being extended with each leg movement; execute moderately fast; inhale on *one* and *three* and exhale on *two* and *four*.

8. Breathing exercise.

Fifth Series.

This series is composed of three groups, each group containing four exercises, and together they form a combination which can be adapted to music.

Each exercise is composed of four movements and should be repeated four times, twice to the right and twice to the left, alternately, except the last, which is repeated in the same direction. The third position always corresponds to the first, and the fourth to the position of attention.

When performed to music it is advisable to employ "two-four" time, allowing two beats to every movement, or four measures to an exercise, the action occurring on the first beat and a pause in position during the second beat. If this is done and the tempo is made to suit the movements, it will be possible to execute the exercises with precision and vigor, and slurring a movement for the sake of keeping time will be eliminated. Every group should be preceded by an introduction of four measures.

SETTING-UP EXERCISES.**FIRST GROUP.***First Exercise.***FIG. 55.****FIG. 56.****Counts.**

- 1—2. Raise arms overhead laterally and step position forward right.
Fig. 55.
- 3—4. Lunge forward right and swing the arms downward and backward laterally. Fig. 56.
- 5—6. Resume first position.
- 7—8. Resume position of attention.
Repeat left, right, left.

Second Exercise.

FIG. 57.



FIG. 58.

Counts.

- 1—2. Raise right arm obliquely upward to the right, and left arm obliquely backward to the left, and step position forward to the right with the right foot. Fig. 57.
- 3—4. Lunge obliquely forward to the right and swing right arm downward to the rear, and left arm obliquely upward, Fig. 58.
- 5—6. Resume first position.
- 7—8. Resume position of attention.
Repeat left, right, left.

Third Exercise.

FIG. 59.



FIG. 60.

Counts.

- 1—2. Flex arms over shoulders with lateral motion, knuckles to the rear, hands closed, and step position sideward right. Fig. 59.
- 3—4. Lunge sideward right and extend arms to side horizontal, knuckles to the rear. Fig. 60.
- 5—6. Resume first position.
- 7—8. Resume position of attention.
Repeat left, right, left.

Fourth Exercise.

FIG. 61.



FIG. 62.

Counts.

- 1—2. Raise arms to side horizontal and step position backward right.
Fig. 61.
- 3—4. Lunge backward right and raise arms overhead, knuckles out. Fig. 62.
- 5—6. Resume first position.
- 7—8. Resume position of attention.
Repeat left, right, left.

SETTING-UP EXERCISES.

SECOND GROUP.

First Exercise.

FIG. 63.

Counts.

- 1—2. Lunge forward right and raise arms to side horizontal. Fig. 63.
- 3—4. Bend trunk forward and move arms downward. Fig. 64.
- 5—6. Resume first position.
- 7—8. Resume position of attention.
Repeat left, right, left.



FIG. 64.

Second Exercise.

FIG. 65.

Counts.

- 1—2. Lunge sideward right and raise right arm obliquely upward, and left arm obliquely downward. Fig. 65.
- 3—4. Bend trunk sideward right and swing left arm upward, knuckles out, and right arm downward in rear of body, knuckles out. Fig. 66.
- 5—6. Resume first position.
- 7—8. Resume position of attention.
Repeat left, right, left.



FIG. 66.

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SETTING-UP EXERCISES.*Third Exercise.***FIG. 67.****Counts.**

- 1—2. Lunge obliquely forward to the right, and raise arms overhead laterally. Fig. 67.
- 3—4. Bend trunk forward and swing arms downward and upward. Fig. 68.
- 5—6. Resume first position.
- 7—8. Resume position of attention.
Repeat left, right, left.



FIG. 68.

Fourth Exercise.

FIG. 69.

Counts.

- 1—2. Lunge backward right and raise arms to side horizontal, knuckles up. Fig. 69.
- 3—4. Bend trunk and head backward and raise arms overhead palms in. Fig. 70.
- 5—6. Resume first position.
- 7—8. Resume position of attention.
Repeat left, right, left.



FIG. 70.

SETTING-UP EXERCISES.**THIRD GROUP.***First Exercise.***FIG. 71.****Counts.**

- 1—2. Stride forward right and flex arms over shoulders laterally, hands closed, knuckles up. Fig. 71.
- 3—4. Face to the left on both heels, bending knees and striking arms sideward, knuckles down. Fig. 72.
- 5—6. Resume first position.
- 7—8. Resume position of attention.
Repeat left, right, left.



FIG. 72.

Second Exercise.

FIG. 73.

Counts.

- 1—2. Stride sideward right and raise and circle arms outward, crossing them below. Fig. 73.
- 3—4. Bend right knee and trunk obliquely forward, clasp thigh with arms. Fig. 74.
- 5—6. Resume first position.
- 7—8. Resume position of attention.
Repeat left, right, left.



FIG. 74.

SETTING-UP EXERCISES.

Third Exercise.

FIG. 75.



FIG. 76.

Counts.

- 1—2. Stride backward right, and raise arms overhead laterally, palms in. Fig. 75.
- 3—4. Turn about on both heels, bend left knee and trunk backward and lower arms to side horizontal, palms up. Fig. 76.
- 5—6. Resume first position.
- 7—8. Resume position of attention.
Repeat left, right, left.

Fourth Exercise.

FIG. 77.

Counts.

- 1—2. Bend to the squatting position, hands on the ground. Same as Fig. 45a.
- 3—4. Extend to the leaning-rest with legs straddled. Fig. 77.
- 5—6. Resume first position.
- 7—8. Resume position of attention.

Repeat four times.

NOTE.—Length of stride in these exercises should be 28 inches between heels.



FIRST AID TO THE INJURED.

SHOCK.

Shock is a more or less profound depression of the nervous system. Collapse is another term used in describing this condition. A person sustaining injuries, burns, or even sudden fright is liable to suffer from shock. The amount of shock depends not so much upon the nature of the accident as upon the character of the individual.

SYMPTOMS OF SHOCK.—The onset of the symptoms is likely to be unnoticed unless looked for.

There is either apathy (a stupid condition in which the patient manifests no interest in what is taking place about him), partial or complete unconsciousness, feeble breathing, face pale, pinched, and anxious; eyelids drooping, eyes dull, and pupils dilated; pulse feeble, usually rapid, and often absent at the wrist; the skin is cold, and there may be shivering; sometimes the mind wanders. These symptoms may follow the slightest injury, and again they may be absent or only present in a slight degree after the severest accident. In most cases reaction will take place in a few hours; in others no reaction takes place, and the person dies from heart failure.

TREATMENT.—If there is severe bleeding it must be stopped, but no more than this should be done until after attending to the shock. Place the patient in a horizontal position, the head slightly lowered; give a dessert-spoonful of whisky or alcoholic liquor in a table-spoonful of hot water every 15 minutes until five or six doses have been taken. Wring out flannels in hot water and lay them on the chest and abdomen; then cover the patient with a blanket to keep in the heat. Place hot water bottles, hot bricks, or anything hot along both the sides of the body and legs, inside the thighs, and under the armpits; in using hot water bottles or hot bricks care

must be had not to burn the patient, and to warm and stimulate the patient in every way is the object of treatment.

SUFFOCATION.

If a person has been under water, or in a room full of illuminating gas or thick with smoke, in a sewer, old mine, or well, or has been hanged or choked, in every case the result is the same; the air has been prevented from reaching the lungs, consequently he is suffocated. The person may be completely insensible, breathing slightly or not at all, his face purple and swollen, lips livid; but these signs are not always present, for instance, in cases of exposure to a noxious gas.

TREATMENT.—If it be hanging, cut the rope. If water, take it out of him; do not let the fact that hours have elapsed be your excuse, as in apparent drowning, as well as in other forms of suffocation, people have recovered after being insensible for long intervals. A person taken out of the water, either drowned or apparently so, may have a purple, swollen face, livid lips, and eyes bloodshot, in which case he has fought against death and has been suffocated by the exclusion of air from the lungs, and possibly has drawn water instead of air into them. If he appears pale and flabby, it is probable he has fainted or there has been some failure of the heart. The treatment must be carried out on the spot, except in extremely cold weather, when it is proper to remove the body to a place of shelter if it be near. The first object is to make the patient breathe. Send immediately for blankets, dry clothes, and stimulants; allow the chest and shoulders to be exposed to the wind. Open the clothing about the neck and waist; turn the patient on his face; clasp your hands together beneath the stomach and lift as high as possible, letting the head hang down so that the water can run out. Hold in this position for a few seconds and turn patient on his back; if

breathing is absent, apply smelling salts to the nose, holding the container a few inches away from face; tickle the nose with feather or straw; dash cold water on the chest and face; or first cold water, then hot water, being careful not to burn the patient. If the above measures are not successful in a few moments, you must resort to artificial respiration.

ARTIFICIAL RESPIRATION.

The Schaefer or prone pressure method of artificial respiration is now generally used. The advantages of this method are that by it a greater amount of air is gotten into the lungs, it is not necessary to hold the tongue out, and it is much easier for the operator. Unless the operator is extremely rough no danger attends its practice.

In the Schaefer method the patient is laid on the ground face down. The arms may be stretched out at full length over his head or one arm may be bent so the forehead rests upon it. In either case the face must be placed slightly to one side so that the ground will not block off the air from nose and mouth.

As soon as the patient is in proper position the operator kneels at one side or astride his body, but without resting his weight upon it. The palms of his hands are placed on the short ribs across the small of the back, with the thumbs nearly together. The operator, by letting his weight fall on his wrists, by bending his body forward decreases the size of the chest, and the air is expelled from the lungs. The pressure is then released by the operator swinging backward, the elastic chest springs out to its original size, and the air is drawn into the lungs. The movement is at the rate of 12 to 14 a minute. Better time with a watch.

Whatever the method of artificial respiration used, it should be kept up for at least an hour and a half.

BURNS.

Burns are dangerous, however caused. Influenced by their location, depth, and extent, they are divided into three classes or degrees:

First degree: When the skin is simply reddened.

Second degree: When the skin is blistered.

Third degree: When the skin is charred.

If they are of large size, they are apt to be fatal.

They are always accompanied by shock. Treat by applying freely on the affected parts carron oil (which consists of equal parts of linseed oil and limewater); cover the parts thickly with cotton batting or flannel; secure the whole with a light bandage. The air must be kept from the burned parts and they must be kept warm. Burns may be treated with free applications of sweet oil, fresh lard, vaseline, etc.

SCALDS.

Burns from steam may be treated by dusting the parts thickly with bicarbonate of soda (commonly known as baking soda). Cover the parts in the same manner as burns from heat, with cotton batting or flannel.

WOUNDS.

A wound is a breach of continuity of the tissue or a division of tissue. Wounds are of various kinds—incised, lacerated, contused, etc.—and are dangerous in proportion to their location, extent, and depth. For practical reasons this subject will be treated from the standpoint of asepsis, *i. e.*, teaching how to dress a wound so as to lessen the danger of blood poisoning. If a doctor is available, his services should be secured. Wounds should be treated with an antiseptic solution made of a tablet of bichloride of mercury dissolved in a quart of water. These tablets are carried in the medical bag accompanying each hook and ladder truck in the Department.

Take some gauze, soak it in the solution and wash out the wound, being sure to remove all foreign matter, such as grit, splinters, pieces of cloth, in fact, anything that does not belong in the wound, then place a compress of gauze wet with the solution on the wound, then bandage comfortably to prevent the ingress of germ into the wound.

HEMORRHAGE OR BLEEDING.

When a wound occurs, it is usually accompanied by bleeding—this may be profuse or small. When the small blood vessels are opened the bleeding is called oozing, because it comes from the capillaries. When the larger blood vessels, such as the arteries and veins, are opened, the hemorrhage is profuse and requires immediate attention for its control. If the wound is in an artery, the blood flows with a spurt or impulse and is bright red in color.

If the wound is in a vein, the blood flows smoothly and is of a dark red or purple color. Frequently both artery and vein are opened because they, as a rule, accompany each other, running side by side. We then have a mixed hemorrhage which makes it impossible to determine from its appearance whether an artery or vein have been opened, or both. Quickly checking the flow of blood is the object to be attained, and for this reason it is better to compress the blood vessel by placing your finger or thumb in the wound, making as much pressure as you can, placing a compress over the wound and binding it tightly on. If this does not control the bleeding, you must apply a tourniquet at a point between the wound and the heart; they may be made from rubber hose, rope, cord, suspenders, bandages, or any cloth that will encircle the injured limb—a handkerchief folded in a triangle in which a small stone or any hard substance is placed may be wound around the limb, and a loop through which a stick may be passed can be used as a capstan for tightening the compress.

STUDY THE STRUCTURE OF THE ARTERIES in order that we may know at what points a compressible point may be found. If the wound is in the leg or arm, the compressible point is attained by placing the fingers or a pad directly over the bleeding point. If the wound is in the chest or abdomen, it is not possible to reach and compress the arteries with the fingers, the point of the wound. Any hemorrhage may be stopped by direct application of pressure to the bleeding point.

In the upper arm the artery lies on the inner side of the bone and under the triceps muscle. By pressing the thumb deep under this muscle and just over the bone the artery may be compressed.

In the upper part of the arm the artery lies in front and just below the axilla. It may be stopped by deep pressure with the two thumbs at this point. The head support of the wounded leg may be cut off.

The supply of blood to the shoulder, armpit and whole arm is interrupted by compressing the artery which lies under the collar bone. To do this stand behind the patient and thrust the fingers far down behind the neck bone.

A bleeding wound should be treated as follows: Lay the patient at full length, the head very slightly raised; raise the part of the body wounded to a higher level than the rest; expose the wound—that is, if there is clothing or anything else in the way, remove it—then cleanse the wound and bandage it as described before. Venous bleeding in a limb is controlled by raising the limb.

In cases where there is bleeding from a place to which it is difficult to apply pressure or a bandage, protect a mass of ice may be held on the compress, allowing the very cold water to reach the wound. Ice or cold in any form will arrest the most bleeding; use very cold water if a bleeding wound is to be treated or else use water as hot as can be borne—either contracts or dilates vessels. Warm water or even oil in any form increases bleeding.

FRACTURES.

A fracture is a broken bone. In *simple* fractures the bone is broken, but skin is not injured to such an extent as to expose the bone.

A *compound* fracture is so called because the skin and the intervening parts are also divided down to point of fracture. In compound fractures the ends of the broken bone may be driven through the skin. A compound fracture is more serious and dangerous than a simple fracture.

TREATMENT.—The treatment by any but a surgeon must depend on the surrounding circumstances; rid yourself of the idea that something must be done immediately. There is not the least hurry about setting a fracture. If the patient can remain at or near the scene of accident until the surgeon arrives, place him in a comfortable position and uncover the injured part; cut everything such as clothing away with scissors or sharp knife; place injured part on a pillow or other soft material; lay a wet cloth on the fracture and sprinkle it frequently with cold water. Do not by unnecessary handling add to the suffering of the injured one and perhaps retard his recovery.

If a patient must be moved for any reason before the arrival of the surgeon, you may draw the bone into as nearly its natural position as possible by placing one hand above and the other below the seat of fracture and pulling steadily without using unnecessary violence; take two pieces of board as long as or longer than the bone that is injured, and, if possible, as wide as the limb is thick, place on them a pad made of cotton batting or any soft substance, apply them on the limb and secure firmly by tying them with strips of cloth or handkerchiefs, placing them above and below the seat of the fracture; anything with a flat surface may be used for splints. In an emergency, for a fracture of the leg below the knee a soft pillow may

be placed under the leg, turning up the sides of the pillow and securing it firmly about the leg with strings of cloth, handkerchiefs, etc.

TRANSPORTATION OF WOUNDED.

When it is necessary to remove an injured person from one place to another it should be done in such a manner as to cause him as little danger and suffering as possible. By rough handling and transportation, the sharp ends of a broken bone may be thrust through the flesh or may cut into an artery, or the wound may bleed afresh. After the wound has been attended to, the patient should, if possible, be placed on a stretcher. Stretchers may be improvised from doors, shutters, boards, and, what is more convenient for use in the Department, horse blankets, carried on the apparatus, stretched over the handles of the short hooks and secured by safety pins, make a good means of transporting the injured. When ready to place the patient on a stretcher, one bearer kneels on each side of the patient and joins hands underneath his hips and shoulders with the bearer on the opposite side; a third man attends to the wounded limb and looks after the bandage or splints that may have been applied. The bearers then rise to their feet, raising the patient in a horizontal position, and by a series of side steps bring the patient over the stretcher (which should always be placed at the head of the patient on a line with his body); he should be lowered quietly onto it and made as comfortable as possible. The taller of the two bearers places himself between the handles at the head of the patient and the other at the foot. The bearer at the head starts with his left foot, the other with his right. Should they keep step, the stretcher would roll badly. The patient is carried feet first, excepting when going up a hill or upstairs, when he is carried head first. Other means for transporting the injured when a stretcher can not be procured or improvised have been taught in the Department

schools of instruction and are familiar to all members of the uniformed force.

HYGIENE.

Hygiene is the care and promotion of health and prevention of disease. The human body must be protected from harmful external influences by proper clothing and suitable homes—the waste effects must be removed by the proper applications of the principles of cleanliness and a suitable amount of treatment must be provided.

Pure air is essential to health—the atmospheric air is composed of oxygen 20.96, nitrogen 78, argon 1, carbon dioxide 0.04, in 100 parts, with traces of ammonia, watery vapor, and organic matter. When the atmosphere becomes confined its composition differs from that of pure normal air; the change in its composition is due to the respiration of persons and artificial illumination and heating, which results in a decrease of oxygen; also an increase of temperature of the air and an addition of watery vapors and some volatile matter from the lungs of the individuals present; and also to the presence of dust and bacteria.

Sufficient fresh air should be admitted to an apartment to destroy all sensible odors or impurities resulting from imperfect ventilation. Such an exchange of air is called ventilation.

It is estimated that one person should have room of sufficient size to contain at least 3,000 cubic feet of pure air per hour.

The skin throws off daily a certain amount of matter, both solid and liquid, which should be removed—neglect to do so will cause ill health. Cool baths should be taken frequently, once a day upon rising, if possible, but in no case should they be taken less than three or four times a week.

The scalp, nails, and parts of the body where there is a growth of hair should be cleaned regularly. The teeth should be cleaned morning and night.

Heating of rooms varies according to the season of the year. The temperature of rooms for house dwellers should be in winter between 60° and 70° F. and in summer from 65° to 75° F.

A too high degree of heat in dwellings interferes with heat conduction and evaporation, while a too low temperature, by reason of the withdrawal of the body heat in a greater rate than it is substituted, is dangerous. Sudden changes causing disturbance in the heat equilibrium of the body, thereby lowering the resisting force of the body, predispose to certain disease.

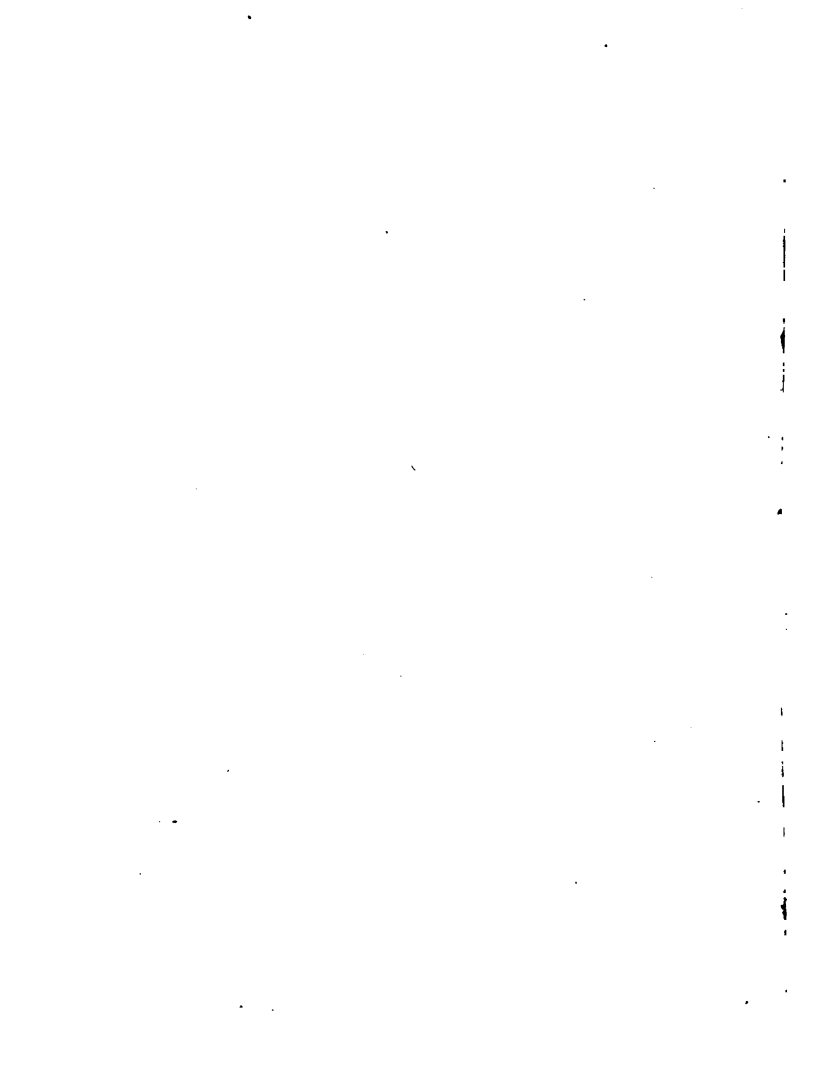
EXERCISE.—Fatigue is a purely personal factor and depends on individual susceptibility and is counteracted by keeping the body fit by a proper degree of exercise. *Good habits*, above all else, are the best safeguard against the contraction of disease.

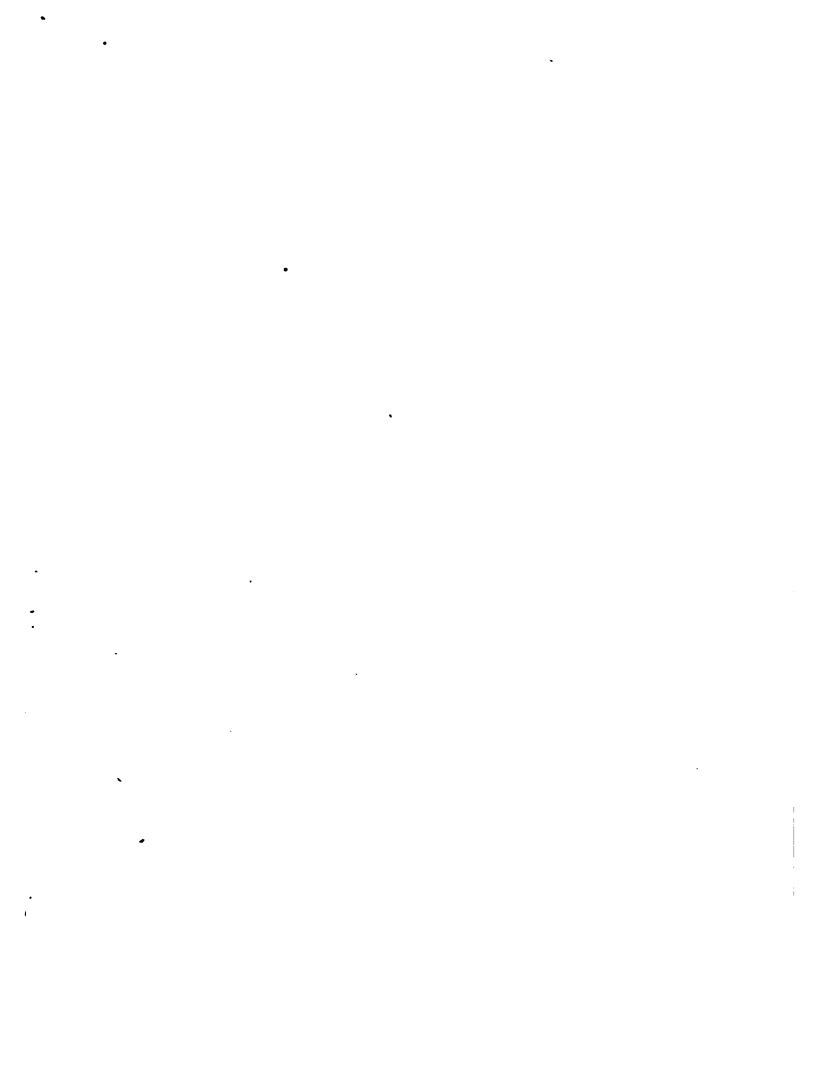












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